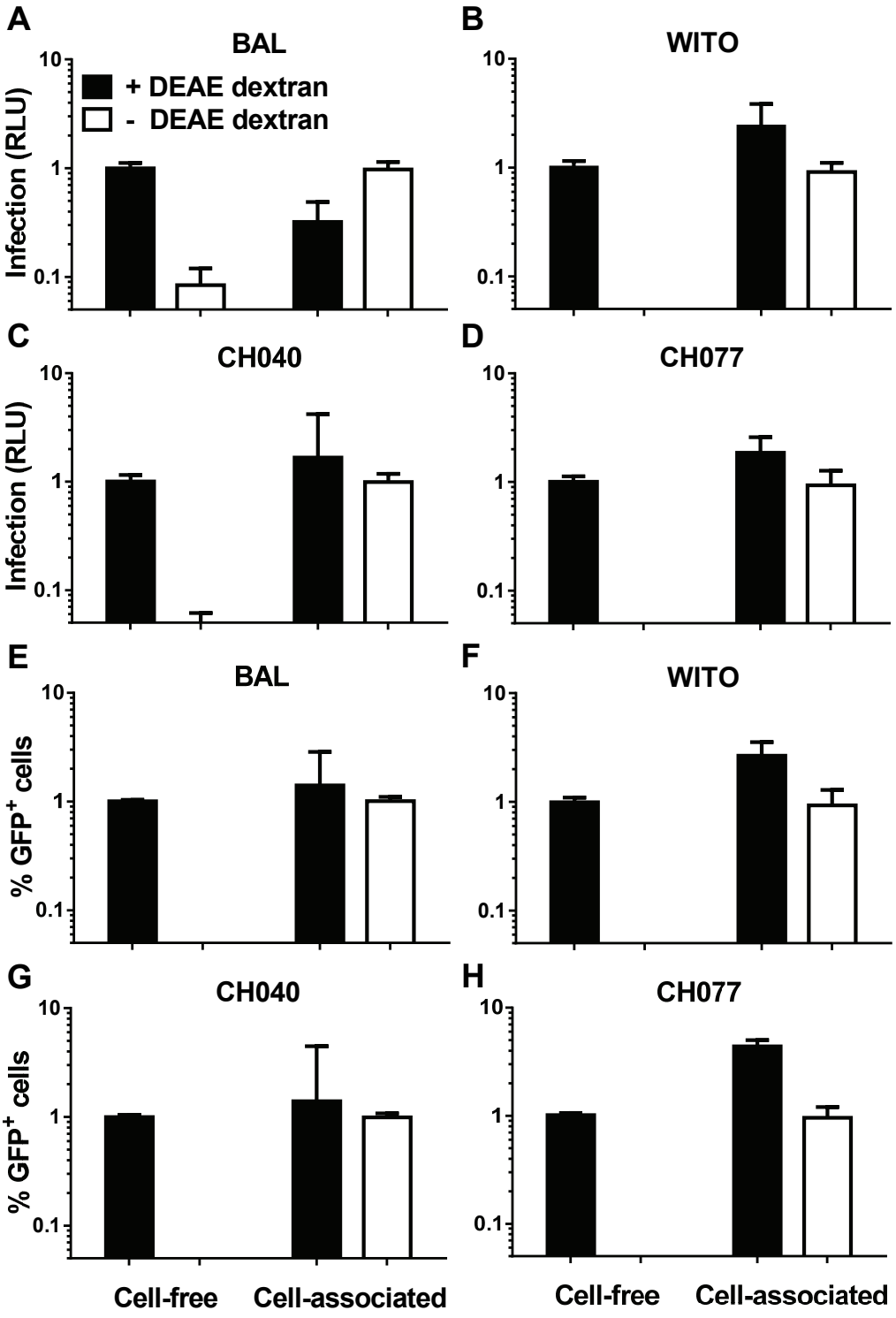

Figure S1: Infection with cell-free or cell-associated virus ± DEAE-dextran (10µg/mL). The HIV-1 Env variants, BAL, WITO, CH040 and CH077, were tested on TZM-bl **(A-D)** or A3R5 **(E-H)** target cells with and without DEAE-dextran added to the media. Results are summarized as infection based on relative luminescence units (RLU) **(A-D)** or percentage of GFP^+ ($Far\ Red^-$) cells **(E-H)**. Data are normalized to the mean of the positive control wells with (cell-free) and without (cell-associated) DEAE-dextran and expressed as median ± IQR, where 1 is equal to 100 percent infection.

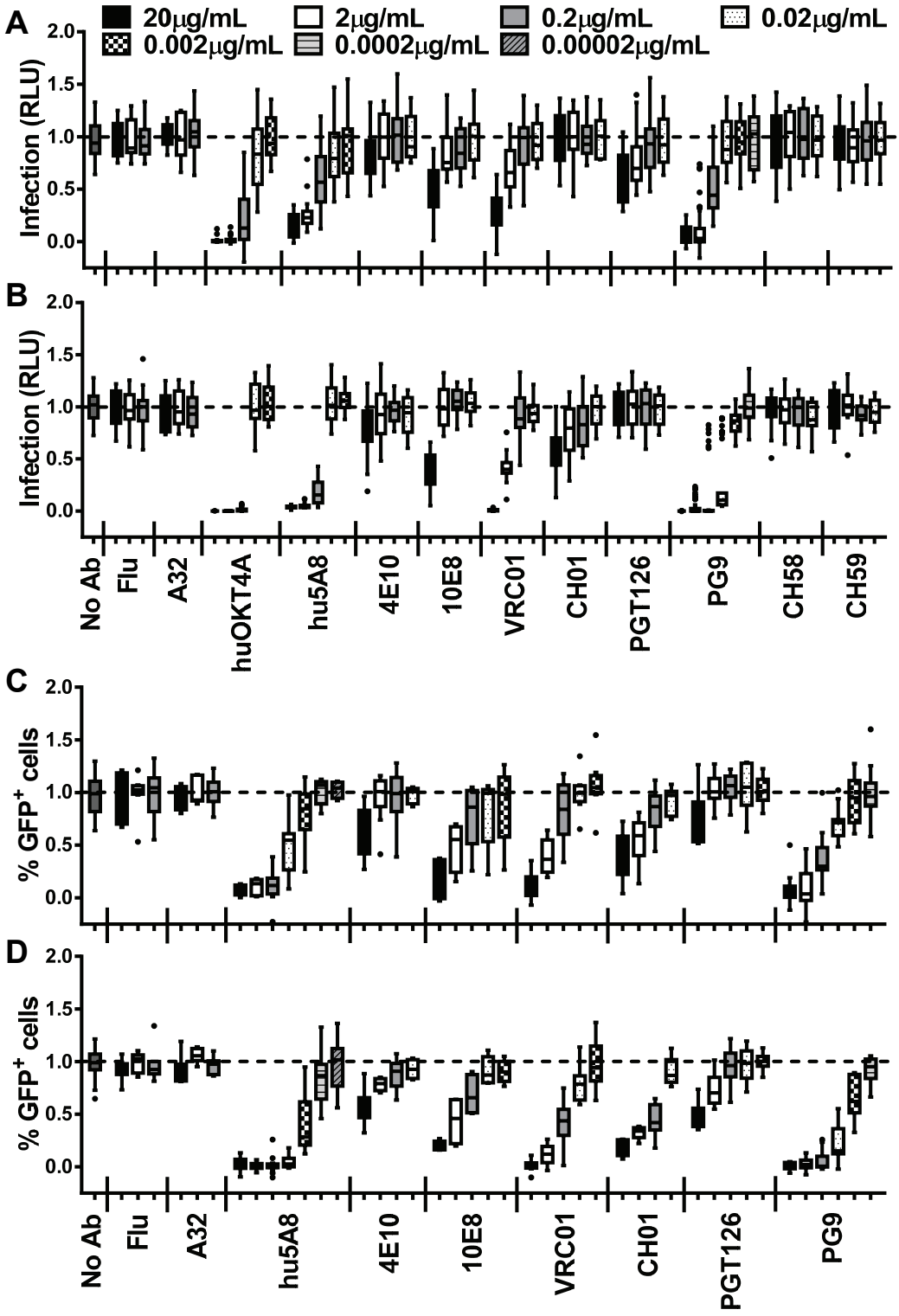

Figure S2A: Infection with cell-associated or cell-free WITO ± DEAE-dextran with different antibodies. TZM-bl **(A,B)** or A3R5 **(C,D)** target cells were infected by cell-associated **(A,C)** or cell-free **(B,D)** WITO virus in the presence of different concentrations (20-0.00002μg/mL) of antibodies including anti-Flu, A32, 4E10, 10E8, VRC01, CH01, PGT126, PG9, CH58, CH59, and the CD4-directed antibodies hu5A8 and huOKT4A. Background (negative control) was subtracted from results, and results were normalized to the no antibody positive control and summarized as infection based on RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)** where 1 is equal to 100 percent infection. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

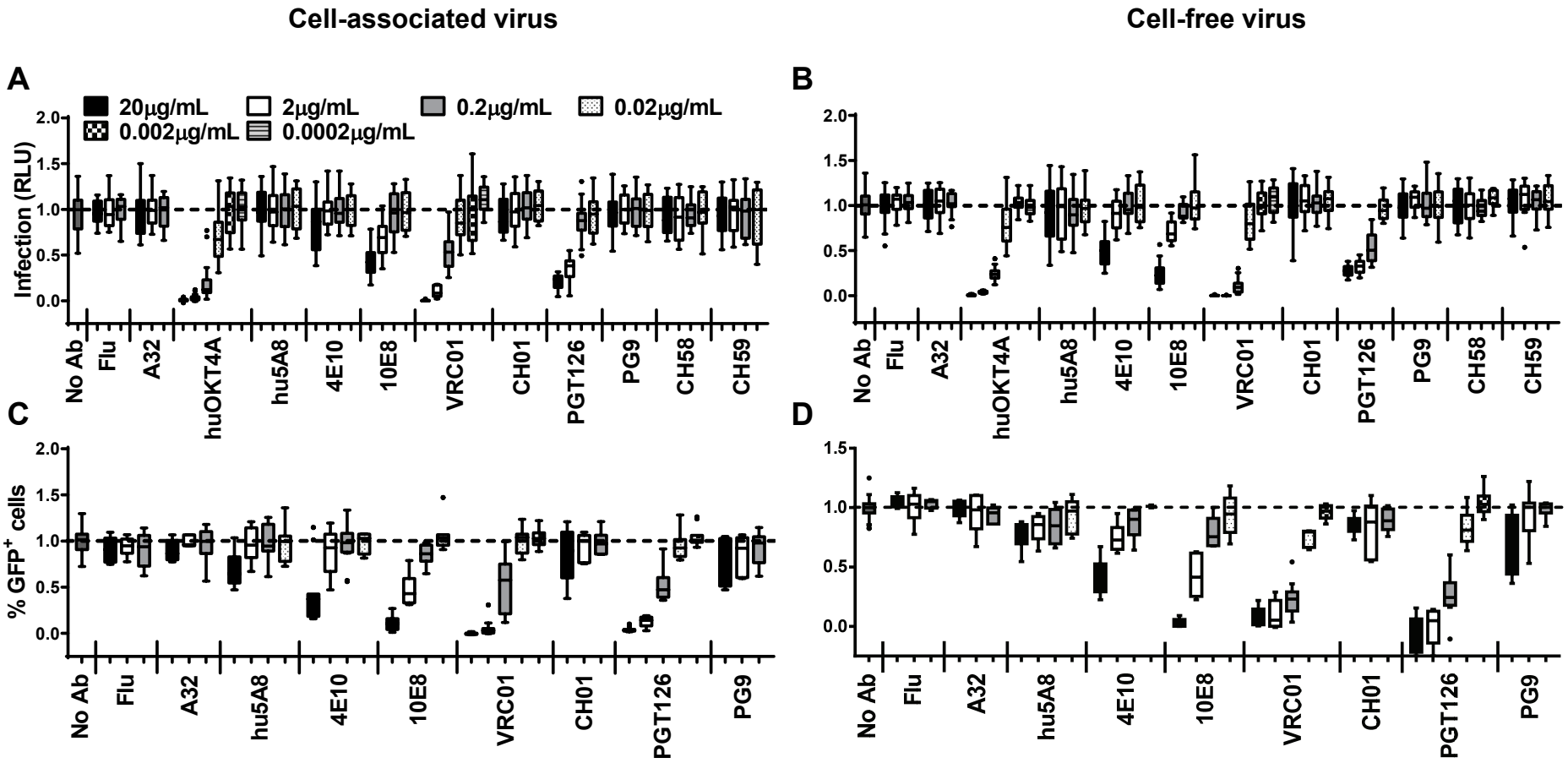

Figure S2B: Infection with cell-associated or cell-free virus ± DEAE-dextran (10μg/mL) with different antibodies. **I**nfection of TZM-bl **(A,B)** or A3R5 **(C,D)** target cells by cell-associated **(A,C)** or cell-free **(B,D)** BAL virus was carried out in the presence of different concentrations (20-0.0002μg/mL) of antibodies including anti-Flu, A32, 4E10, 10E8, VRC01, CH01, PGT126, PG9, CH58, CH59, and the CD4-directed antibodies hu5A8 and huOKT4A. Background was subtracted, and results were normalized to the no antibody positive control and summarized as infection based on quantification of RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)**. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

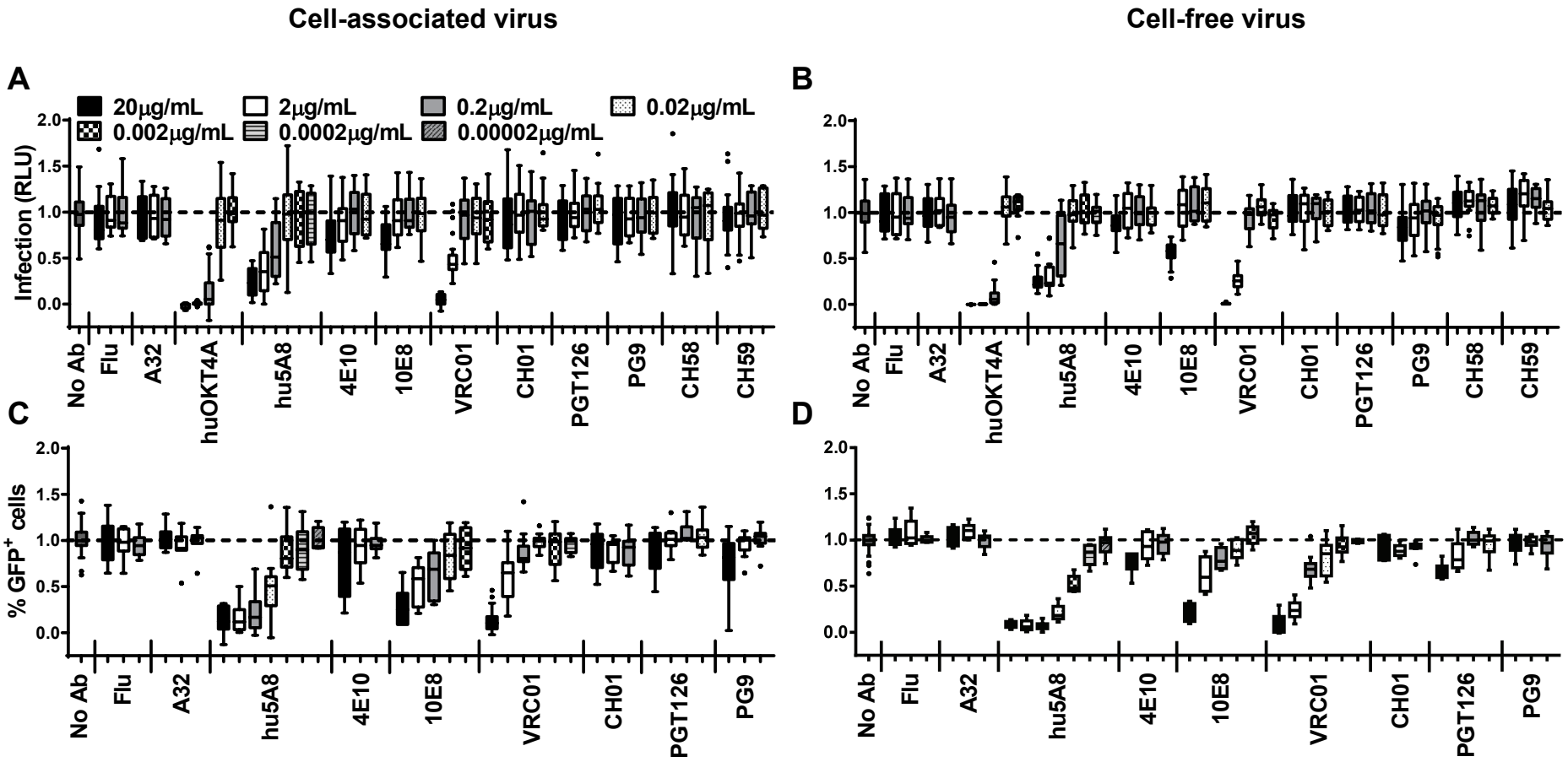

Figure S2C: Infection with cell-associated or cell-free virus ± DEAE-dextran (10μg/mL) with different antibodies. Infection of TZM-bl **(A,B)** or A3R5 **(C,D)** target cells by cell-associated **(A,C)** or cell-free **(B,D)** CH040 virus was carried out in the presence of different concentrations (20-0.00002μg/mL) of antibodies including anti-Flu, A32, 4E10, 10E8, VRC01, CH01, PGT126, PG9, CH58, CH59, and the CD4-directed antibodies hu5A8 and huOKT4A. Background was subtracted, and results were normalized to the no antibody positive control and summarized as infection based on quantification of RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)**. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

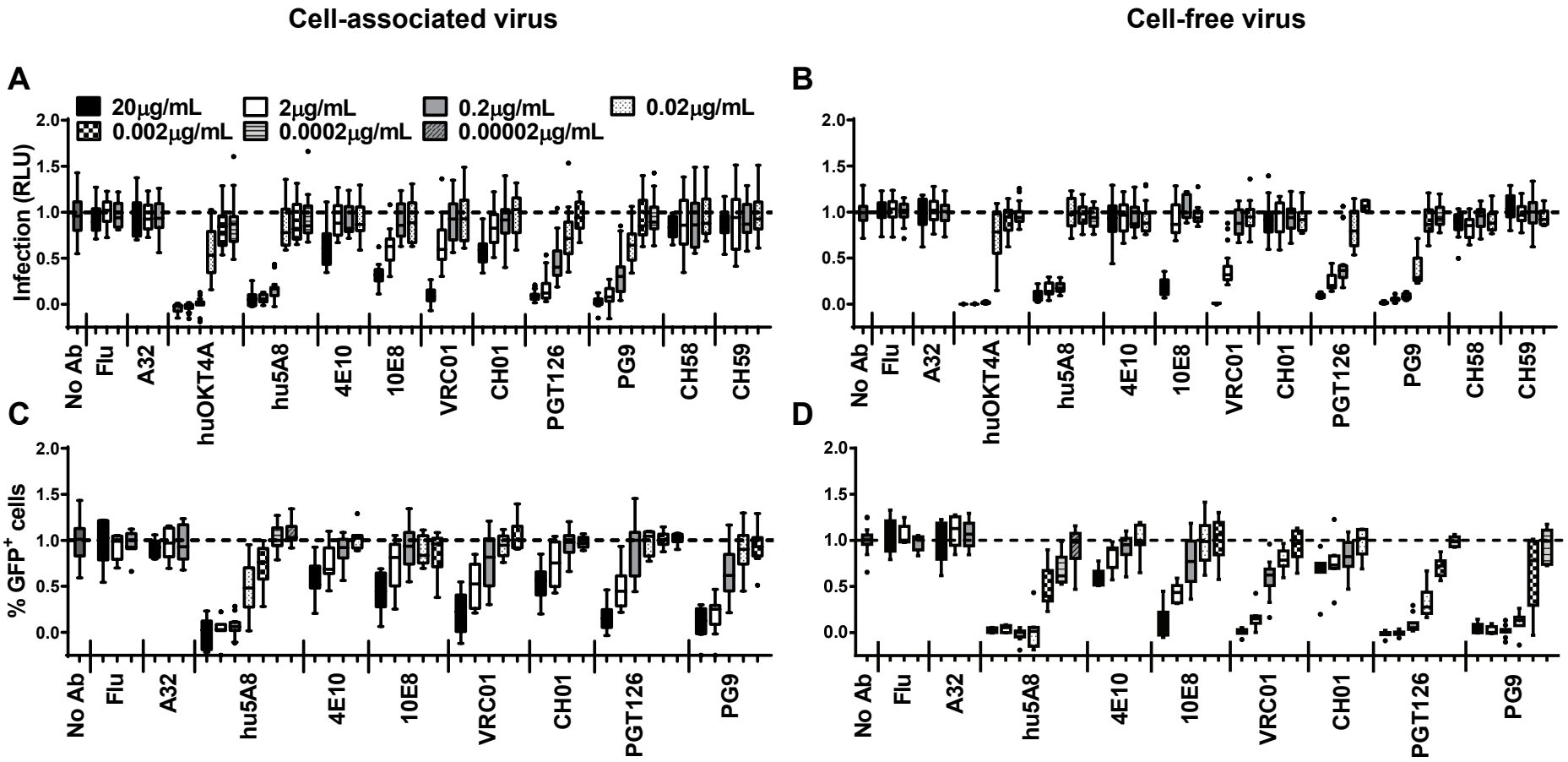

Figure S2D: Infection with cell-associated or cell-free virus ± DEAE-dextran (10μg/mL) with different antibodies. Infection of TZM-bl **(A,B)** or A3R5 **(C,D)** target cells by cell-associated **(A,C)** or cell-free **(B,D)** CH077 virus was carried out in the presence of different concentrations (20-0.00002μg/mL) of antibodies including anti-Flu, A32, 4E10, 10E8, VRC01, CH01, PGT126, PG9, CH58, CH59, and the CD4-directed antibodies hu5A8 and huOKT4A. Background was subtracted, and results were normalized to the no antibody positive control and summarized as infection based on quantification of RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)**. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

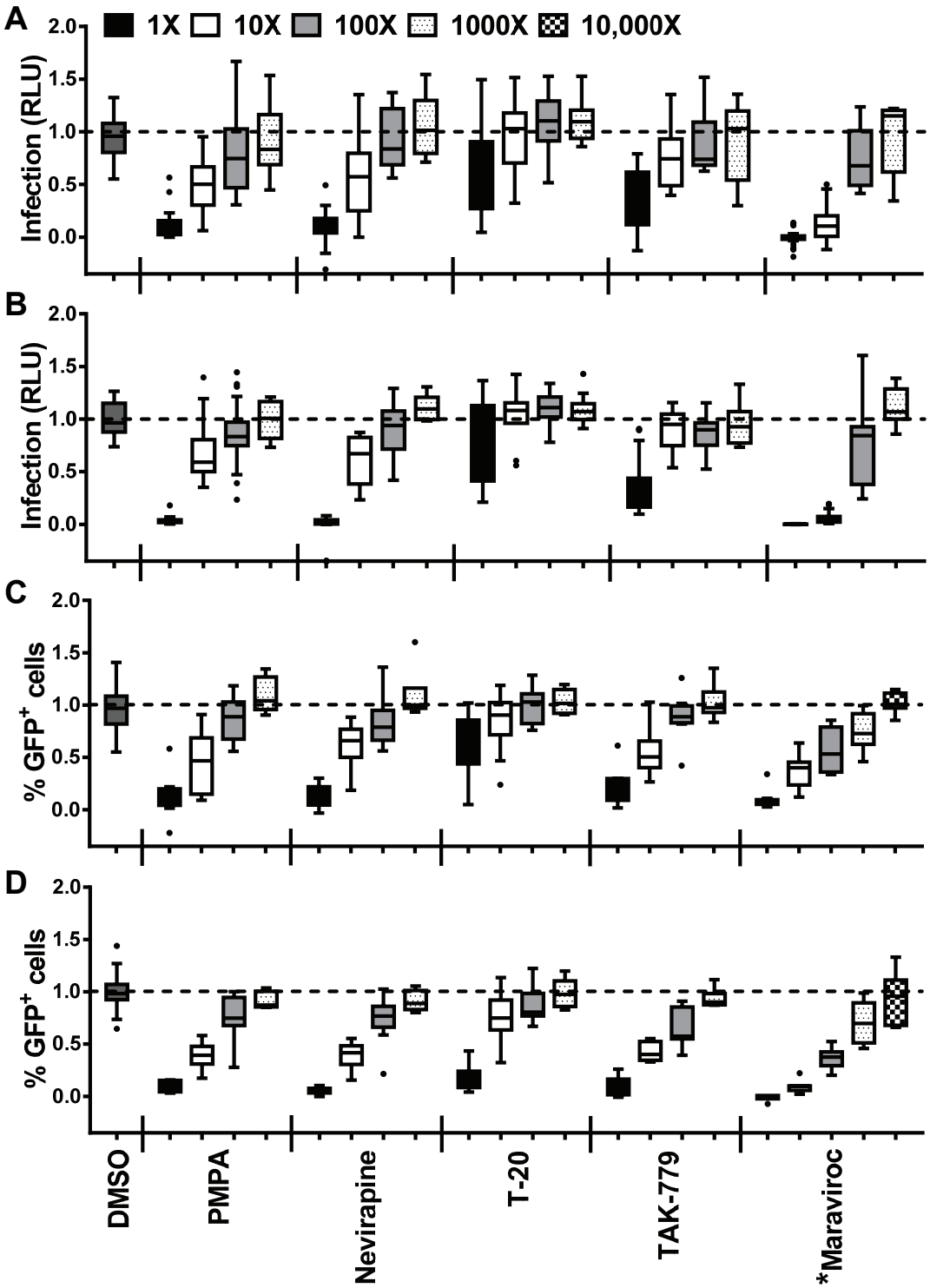

Figure S3A: Infection with cell-associated or cell-free WITO ± DEAE-dextran with different inhibitors. TZM-bl **(A,B)** or A3R5 **(C,D)** target cells were infected by cell-associated **(A,C)** or cell-free **(B,D)** WITO virus in the presence of different concentrations of inhibitors. All inhibitors were serially diluted 10-fold at varying ranges of concentration (PMPA: 10-10000nM, nevirapine: 0.4-400nM, T-20: 0.5-500nM, TAK-779: 1-1000nM), with the exception of maraviroc which was serially diluted 20-fold (*; 0.015625-2500nM). Background was subtracted from results, and results were normalized to the DMSO positive control and summarized as infection based on RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)** where 1 is equal to 100 percent infection. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

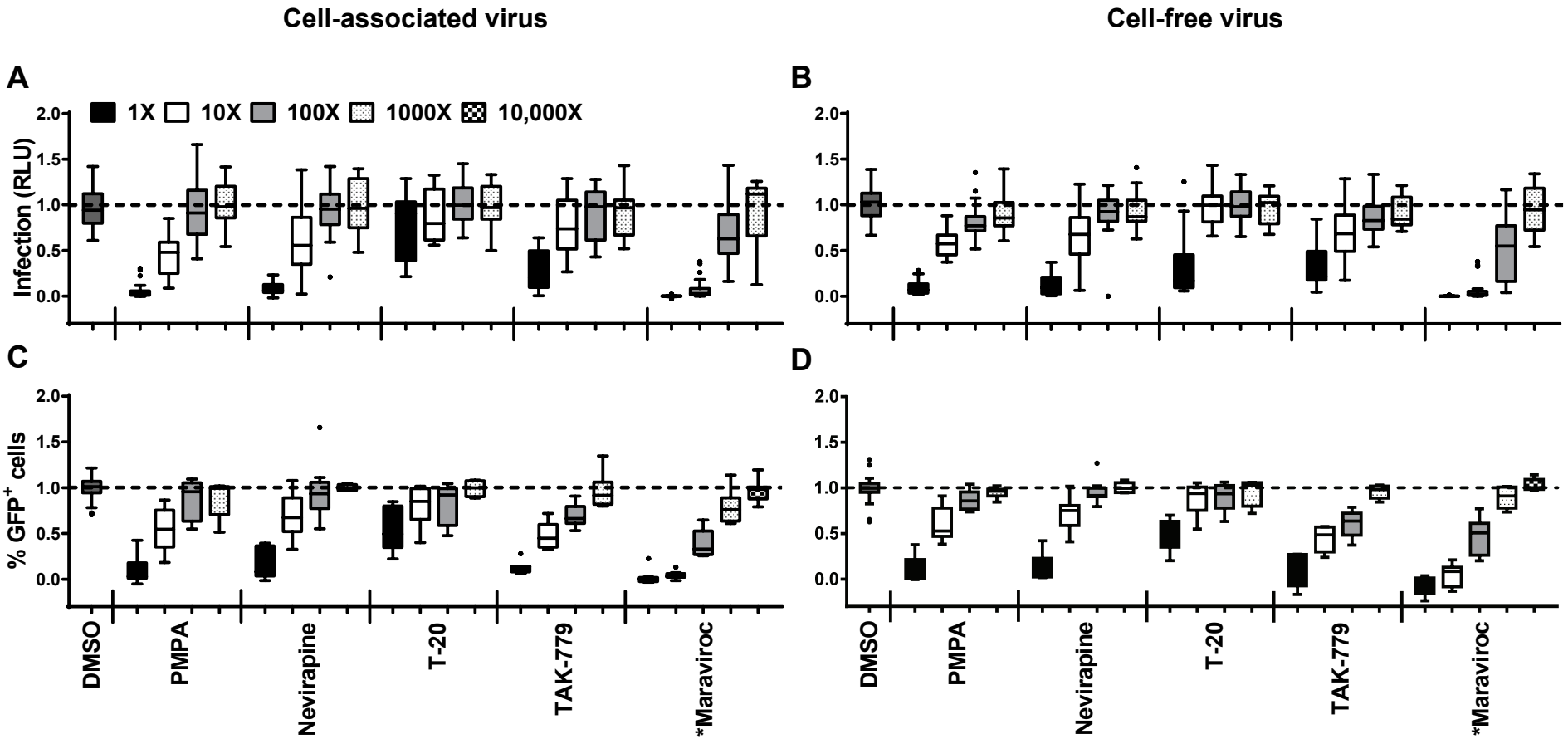

Figure S3B: Infection with cell-associated or cell-free virus ± DEAE-dextran (10µg/mL) with different inhibitors. Infection of TZM-bl **(A,B)** or A3R5 **(C,D)** target cells by cell-associated **(A,C)** or cell-free **(B,D)** BAL virus was carried out in the presence of different concentrations of inhibitors. All inhibitors were serially diluted 10-fold at varying ranges of concentration (PMPA: 0.1-100µM, nevirapine: 0.4-400nM, T-20: 0.5-500nM, TAK-779: 1-1000nM) with the exception of maraviroc, which was serially diluted 20-fold (*; 0.015625-2500nM). Background was subtracted, and results were normalized to the DMSO positive control and summarized as infection based on quantification of RLU **(A,B)** or percentage of GFP^+ (Far Red^-) cells **(C,D)**. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

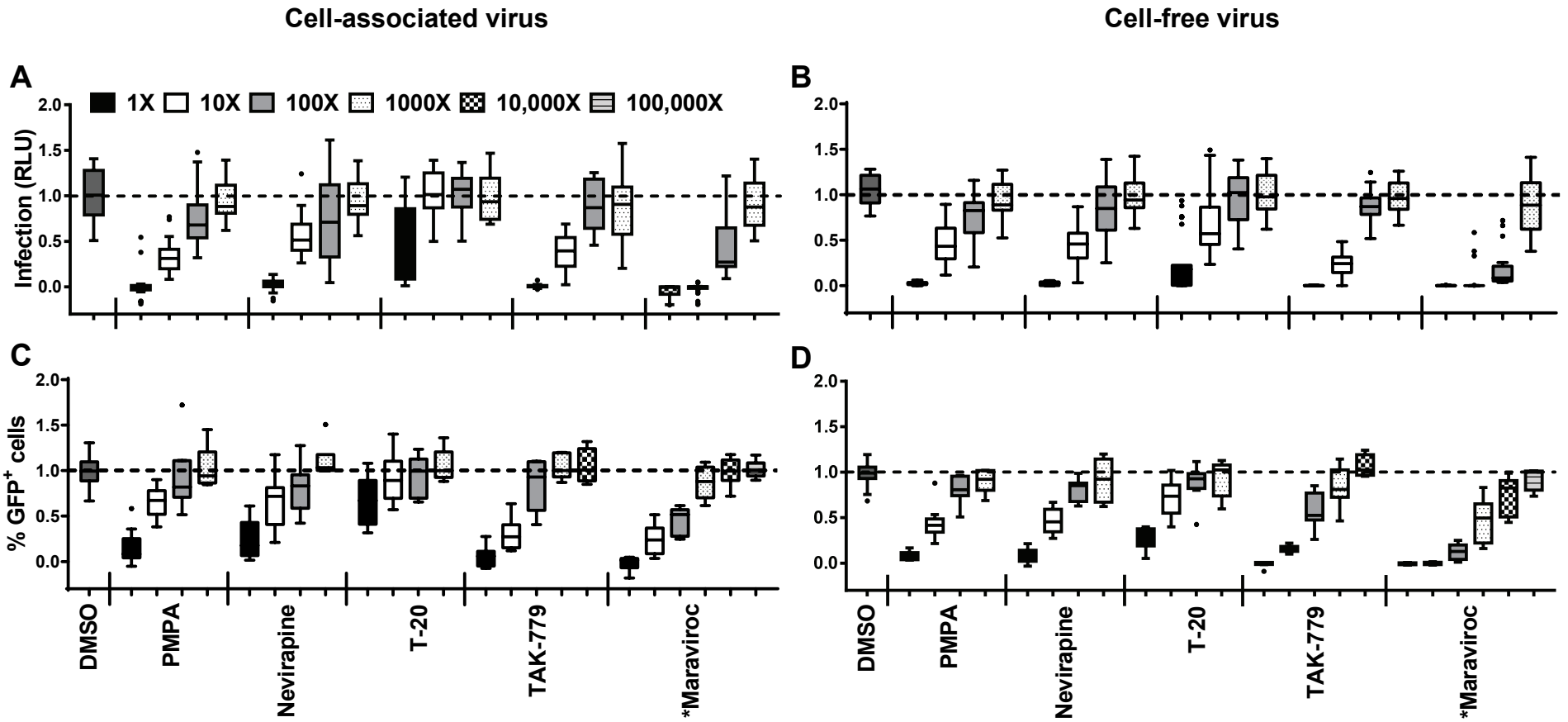

Figure S3C: Infection with cell-associated or cell-free virus ± DEAE-dextran (10µg/mL) with different inhibitors. Infection of TZM-bl **(A,B)** or A3R5 **(C,D)** target cells by cell-associated **(A,C)** or cell-free **(B,D)** CH040 virus was carried out in the presence of different concentrations of inhibitors. All inhibitors were serially diluted 10-fold at varying ranges of concentration (PMPA: 0.1-100µM, nevirapine: 0.4-400nM, T-20: 0.5-500nM, TAK-779: 0.1-1000nM) with the exception of maraviroc, which was serially diluted 20-fold (*; 0.00078125-2500nM). Background was subtracted, and results were normalized to the DMSO positive control and summarized as infection based on quantification of RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)**. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

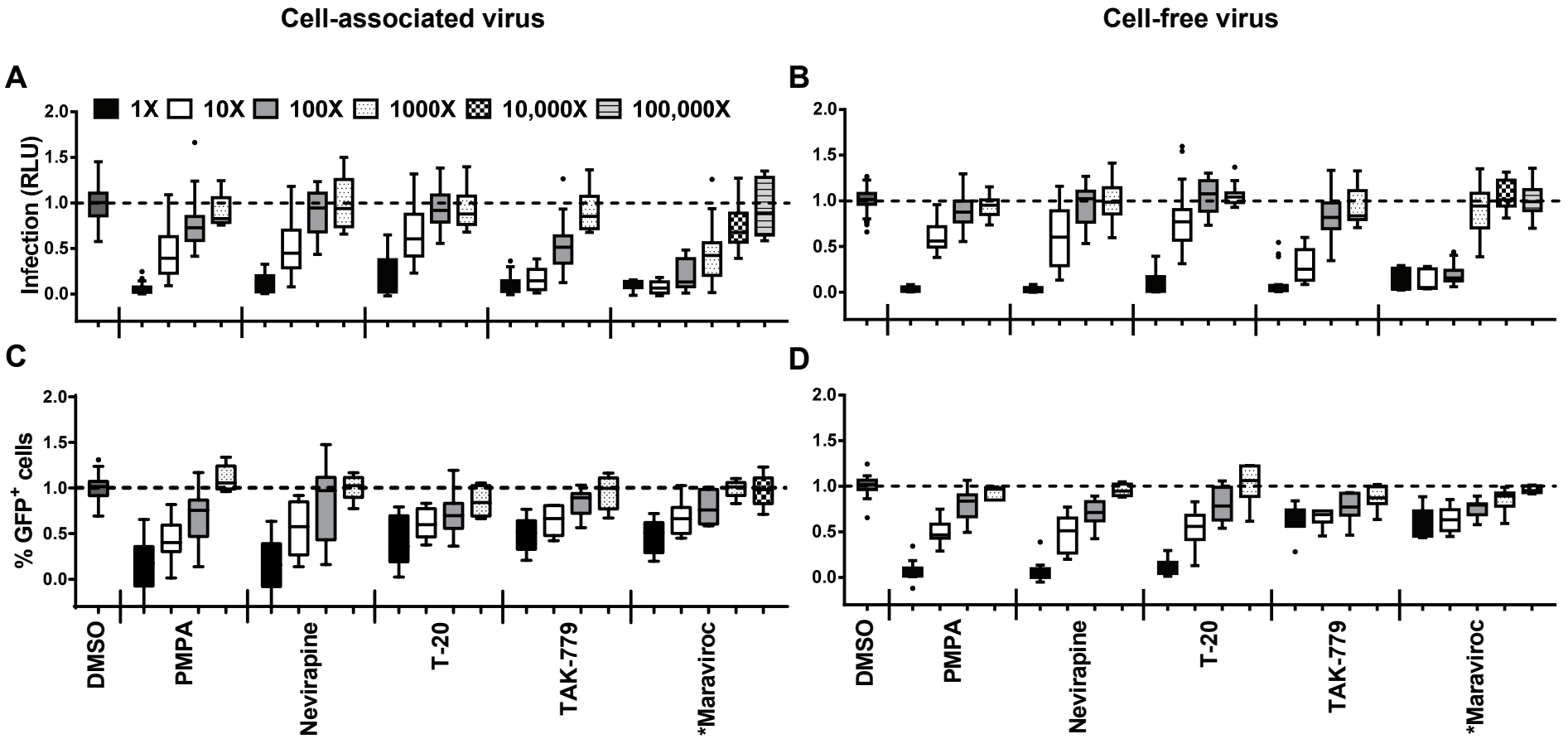

Figure S3D: Infection with cell-associated or cell-free virus ± DEAE-dextran (10µg/mL) with different inhibitors. Infection of TZM-bl **(A,B)** or A3R5 **(C,D)** target cells by cell-associated **(A,C)** or cell-free **(B,D)** CH077 virus was carried out in the presence of different concentrations of inhibitors. All inhibitors were serially diluted 10-fold at varying ranges of concentration (PMPA: 0.1-100µM, nevirapine: 0.4-400nM, T-20: 0.5-500nM, TAK-779: 1-1000nM) with the exception of maraviroc, which was serially diluted 20-fold (*; 0.00078125-2500nM). Background was subtracted, and results were normalized to the DMSO positive control and summarized as infection based on quantification of RLU **(A,B)** or percentage of GFP^+ ($Far\ Red^-$) cells **(C,D)**. Results are expressed as box-and-whisker plots illustrating the median, first and third quartiles, and range with outliers (circles).

A

HIV-1 Antibody	Target
A32	gp120 (binding)
huOKT4A	CD4 domain 1
hu5A8	CD4 domain 2
4E10	gp41 MPER
10E8	gp41 MPER
VRC01	gp120 CD4bs
CH01	gp120 V2/V3
PGT126	gp120 V3 glycan
PG9	gp120 V1/V2
CH58/CH59	gp120 V2 (binding)

B

HIV-1 Inhibitor	Target
PMPA	Nucleotide RT inhibitor
Nevirapine	Non-nucleoside RT inhibitor
T-20	gp41 fusion inhibitor
TAK-779	gp120bs on CCR5
Maraviroc	CCR5 entry inhibitor

Table S1: Specificities of HIV-1 antibodies (A) and inhibitors (B) used. Each antibody or inhibitor has a unique target site which is either HIV-1-directed or target cell-directed. Most antibodies were neutralizing except for the binding antibodies A32 and CH58/CH59. The anti-flu Ab82 antibody was used as a negative control. Each antibody/inhibitor was pre-incubated with either cell-associated/cell-free HIV-1 or the target cells in both assays based on the target site of each antibody/inhibitor.

	Neutralizing antibodies						CD4-directed antibodies		Inhibitors				
Env variant/ assay	**10E8**	**4E10**	**VRC01**	**PGT126**	**PG9**	**CH01**	**hu5A8**	**huOKT4A**	**PMPA**	**Nevirapine**	**TAK-779**	**Maraviroc**	**T-20**
BAL A3R5	6.79×10^{-2}	2.79×10^{-1}	6.52×10^{-2}	2.68×10^{-3}	5.08×10^{-1}	3.32×10^{-1}	1.29×10^{-1}		9.75×10^{-1}	7.69×10^{-1}	3.88×10^{-1}	8.53×10^{-1}	8.19×10^{-1}
BAL TZM-bl	1.75×10^{-1}	8.94×10^{-3}	2.03×10^{-7}	2.43×10^{-1}	1.90×10^{-1}	2.91×10^{-1}	3.62×10^{-2}	5.79×10^{-2}	6.97×10^{-2}	9.72×10^{-1}	9.22×10^{-1}	1.24×10^{-1}	6.25×10^{-2}
CH040 A3R5	4.59×10^{-3}	6.67×10^{-1}	4.09×10^{-5}	9.18×10^{-4}	9.05×10^{-1}	5.03×10^{-1}	6.56×10^{-4}		2.41×10^{-1}	1.99×10^{-2}	1.58×10^{-3}	4.76×10^{-4}	3.44×10^{-2}
CH040 TZM-bl	7.35×10^{-1}	3.58×10^{-2}	1.10×10^{-3}	3.14×10^{-2}	4.70×10^{-1}	1.74×10^{-1}	6.68×10^{-1}	9.09×10^{-1}	6.18×10^{-3}	9.88×10^{-1}	1.54×10^{-2}	2.50×10^{-2}	1.30×10^{-4}
CH077 A3R5	4.56×10^{-1}	4.26×10^{-1}	3.42×10^{-4}	5.85×10^{-11}	6.17×10^{-5}	2.69×10^{-1}	9.26×10^{-6}		5.17×10^{-1}	5.07×10^{-1}	5.88×10^{-1}	5.29×10^{-1}	4.49×10^{-1}
CH077 TZM-bl	5.72×10^{-1}	1.41×10^{-2}	1.32×10^{-3}	3.98×10^{-2}	1.74×10^{-6}	3.40×10^{-3}	8.15×10^{-5}	2.83×10^{-3}	3.03×10^{-1}	8.87×10^{-2}	4.12×10^{-3}	3.82×10^{-8}	5.62×10^{-1}
WITO A3R5	8.46×10^{-1}	1.78×10^{-1}	5.97×10^{-9}	2.26×10^{-3}	2.93×10^{-7}	4.76×10^{-6}	3.89×10^{-6}		3.85×10^{-1}	8.83×10^{-4}	9.01×10^{-3}	9.86×10^{-5}	7.31×10^{-3}
WITO TZM-bl	5.67×10^{-1}	2.72×10^{-1}	4.86×10^{-7}	1.21×10^{-3}	2.06×10^{-16}	2.46×10^{-6}	1.75×10^{-3}	1.10×10^{-4}	3.42×10^{-1}	8.99×10^{-2}	4.43×10^{-1}	4.53×10^{-1}	2.37×10^{-1}

Table S2: Comparison of cell-associated and cell-free virus neutralization. The values inside each box are the p values from the stratified exact Wilcoxon sign rank test. Red p values are significant after using Holm's adjustment and blue p values represent tests that had $p<0.05$ but which were not significant after Holm's adjustment. Directional trends are represented such that a gray background illustrates that cell-free virus is more neutralized than cell-associated virus and a green background means that cell-free virus is less neutralized than cell-associated virus. Of the 100 comparisons performed, the difference in neutralization of cell-associated versus cell-free virus was significant in 40 percent of total comparisons for the Wilcoxon statistical analyses. Boxes that remain blank represent antibodies that were not used in the assay.

A

	Cell-associated:cell-free IC50 ratio			
Antibody/ inhibitor	**BAL**	**WITO**	**CH040**	**CH077**
huOKT4A	0.6	0.5	0.8	0.9
hu5A8	N/A	3.6*	0.97	0.6
10E8	0.55	1.1	0.8	0.7
VRC01	3.0*	5.1*	1.9*	2.6*
PGT126	15.1*	N/A	N/A	1.8
PG9	N/A	31.6*	N/A	4.5*
PMPA	0.4	0.6	0.4	0.7
Nevirapine	0.8	0.7	1.9	0.8
T-20	N/A	N/A	1.8	0.9
TAK-779	0.6	0.7	1.8	0.2*
Maraviroc	2.3	1.7	4.1*	0.06*

B

	Cell-associated:cell-free IC50 ratio			
Antibody/ inhibitor	**BAL**	**WITO**	**CH040**	**CH077**
hu5A8	N/A	13.7*	9.9*	6.6*
4E10	1.0	1.4	N/A	0.2
10E8	0.8	2.2	0.4	2.8
VRC01	4.1*	10.1*	6.5*	8.3*
CH01	N/A	8.6*	N/A	5.6
PGT126	2.5*	1.6	N/A	273.5*
PG9	N/A	15.1*	N/A	103.7*
PMPA	0.8	0.8	1.6	0.4
Nevirapine	0.97	1.9	1.1	1.2
T-20	1.1	0.73	1.0	0.3
TAK-779	1.5	2.2	2.7	0.7
Maraviroc	0.2	8.0*	19.9*	0.6

Table S3: Cell-associated to cell-free virus neutralization relative IC50 ratios. The ratios were calculated from the relative IC50s listed in Table 2 for both the TZM-bl **(A)** and A3R5 **(B)** assay. Ratios significantly greater than 1 represent reduced neutralization efficiency of the specific antibody or inhibitor on cell-associated virus compared to cell-free virus. Significant differences between the logIC50s for the cell-associated and cell-free Env variants were assessed and adjusted by Holm's method for multiple comparisons, and are represented with an *.

A

Same factors		Factor that differs	Ab with greater neut. > ab with less neut.	p value	Factor that differs	Ab with greater neut. > ab with less neut.	p value
CA	CH040	A3R5	10E8>VRC01	$1x10^{-3}$	TZM-bl	VRC01>10E8	$1x10^{-5}$
CA	WITO	A3R5	CH01>PGT126	$1x10^{-5}$	TZM-bl	PGT126>CH01	$1x10^{-5}$
CF	CH040	A3R5	PGT126>PG9	$7x10^{-3}$	TZM-bl	PG9>PGT126	$6x10^{-4}$
CH040	A3R5	CA	10E8>VRC01	$1x10^{-3}$	CF	VRC01>10E8	$2x10^{-3}$
BAL	TZM-bl	CA	huOKT4A>VRC01	$1x10^{-5}$	CF	VRC01>huOKT4A	$1x10^{-5}$
WITO	TZM-bl	CA	PGT126>4E10	$1x10^{-5}$	CF	4E10>PGT126	$1x10^{-5}$

Table S4A: Differences in antibody neutralization efficiencies (neut.) with experimental conditions. Pairs of compared antibodies with significantly different neutralization efficiencies based on assay type or cell-associated (CA) versus cell-free (CF) virus. A stratified exact Wilcoxon rank sum test was performed for all possible comparisons of 2 of the 8 antibodies. Significant p values were determined after Holm's adjustment for all the antibody comparisons from the same experimental conditions. > indicates that the antibody to the left has a significantly greater neutralization efficiency than the antibody to the right.

B

CA or CF virus	Assay	Env variant (factor that differs)	Ab with greater neut. > ab with less neut.	p value	Env variant (factor that differs)	Ab with greater neut. > ab with less neut.	p value
CA	TZM-bl	BAL	VRC01>PGT126	$6x10^{-15}$	CH077	PGT126>VRC01	$2x10^{-13}$
		CH040		$5x10^{-10}$			
		WITO		$7x10^{-3}$			
CA	TZM-bl	BAL	VRC01>PG9	$1x10^{-23}$	CH077	PG9>VRC01	$5x10^{-20}$
		CH040	VRC01>PG9	$2x10^{-9}$	WITO	PG9>VRC01	$2x10^{-22}$
CA	TZM-bl	BAL	VRC01>hu5A8	$3x10^{-26}$	CH077	hu5A8>VRC01	$6x10^{-14}$
					WITO	hu5A8>VRC01	$9x10^{-10}$
CA	TZM-bl	BAL	PGT126>PG9	$2x10^{-13}$	CH077	PG9>PGT126	$5x10^{-6}$
					WITO	PG9>PGT126	$2x10^{-21}$
CA	TZM-bl	BAL	PGT126>hu5A8	$6x10^{-15}$	CH040	hu5A8>PGT126	$1x10^{-14}$
					CH077	hu5A8>PGT126	$8x10^{-6}$
					WITO	hu5A8>PGT126	$8x10^{-12}$
CA	TZM-bl	BAL	10E8>PG9	$6x10^{-8}$	CH077	PG9>10E8	$7x10^{-25}$
CA	TZM-bl	BAL	10E8>hu5A8	$5x10^{-9}$	CH040	hu5a8>10E8	$9x10^{-12}$
					CH077	hu5a8>10E8	$4x10^{-22}$
					WITO	hu5a8>10E8	$4x10^{-10}$
CF	TZM-bl	BAL	VRC01>hu0KT4a	$2x10^{-8}$	CH040	hu0KT4a>VRC01	$2x10^{-19}$
					CH077	hu0KT4a>VRC01	$3x10^{-18}$
					WITO	hu0KT4a>VRC01	$3x10^{-32}$
CF	TZM-bl	BAL	VRC01>PGT126	$3x10^{-31}$	CH077	PGT126>VRC01	$4x10^{-5}$
		CH040	VRC01>PGT126	$1x10^{-14}$			
		WIT0	VRC01>PGT126	$2x10^{-18}$			
CF	TZM-bl	BAL	VRC01>PG9	$4x10^{-30}$	CH077	PG9>VRC01	$2x10^{-25}$
		CH040	VRC01>PG9	$1x10^{-11}$	WITO	PG9>VRC01	$2x10^{-42}$
CF	TZM-bl	BAL	VRC01>hu5A8	$1x10^{-31}$	CH077	hu5A8>VRC01	$2x10^{-5}$
					WITO	hu5A8>VRC01	$5x10^{-11}$
CF	TZM-bl	BAL	PGT126>10E8	$7x10^{-10}$	WITO	10E8>PGT126	$1x10^{-2}$
		CH077	PGT126>10E8	$2x10^{-19}$			
CF	TZM-bl	BAL	PGT126>4E10	$4x10^{-21}$	WITO	4E10>PGT126	$1x10^{-3}$
		CH077	PGT126>4E10	$7x10^{-25}$	CH040	4E10>PGT126	$7x10^{-3}$
CF	TZM-bl	BAL	PGT126>PG9	$4x10^{-24}$	CH040	PG9>PGT126	$6x10^{-4}$
					CH077	PG9>PGT126	$5x10^{-39}$
					WITO	PG9>PGT126	$3x10^{-51}$
CF	TZM-bl	BAL	PGT126>hu5A8	$9x10^{-20}$	CH040	hu5A8>PGT126	$3x10^{-16}$
					CH077	hu5A8>PGT126	$3x10^{-3}$
					WITO	hu5A8>PGT126	$5x10^{-18}$
CF	TZM-bl	BAL	PGT126>CH01	$4x10^{-25}$	WITO	CH01>PGT126	$3x10^{-8}$
		CH077	PGT126>CH01	$9x10^{-25}$			
CF	TZM-bl	BAL	10E8>PG9	$1x10^{-13}$	CH077	PG9>10E8	$1x10^{-35}$
					WITO	PG9>10E8	$6x10^{-52}$
CF	TZM-bl	BAL	4E10>PG9	$9x10^{-7}$	CH077	PG9>4E10	$2x10^{-45}$
					WITO	PG9>4E10	$5x10^{-49}$
CF	TZM-bl	CH040	hu5A8>PG9	$1x10^{-13}$	CH077	PG9>hu5A8	$6x10^{-16}$
		BAL	hu5A8>PG9	$1x10^{-2}$	WITO	PG9>hu5A8	$9x10^{-27}$

Table S4B: Differences in antibody neutralization efficiencies (neut.) with experimental conditions. Pairs of compared antibodies with significantly different neutralization efficiencies based on the cell-associated (CA) versus cell-free (CF) Env variant in the TZM-bl assay. A stratified exact Wilcoxon rank sum test was performed for all possible comparisons of 2 of the 8 antibodies. Significant p values were determined after Holm's adjustment for all the antibody comparisons from the same experimental conditions. > indicates that the antibody to the left has a significantly greater neutralization efficiency than the antibody to the right.

C

CA or CF virus	Assay	Env variant (factor that differs)	Ab with greater neut. > ab with less neut.	p value	Env variant (factor that differs)	Ab with greater neut. > ab with less neut.	p value
CA	A3R5	BAL	VRC01>10E8	$1x10^{-5}$	CH040	10E8>VRC01	$1x10^{-5}$
CA	A3R5	BAL	PGT126>10E8	$2x10^{-5}$	CH040	10E8>PGT126	$6x10^{-8}$
					WITO	10E8>PGT126	$5x10^{-4}$
CA	A3R5	BAL	VRC01>hu5A8	$1.5x10^{-8}$	CH040	hu5A8>VRC01	$1x10^{-8}$
					CH077	hu5A8>VRC01	$7x10^{-11}$
					WITO	hu5A8>VRC01	$2x10^{-12}$
CA	A3R5	BAL	VRC01>PG9	$2x10^{-10}$	CH040	PG9>VRC01	$5x10^{-9}$
					CH077	PG9>VRC01	$4x10^{-3}$
					WITO	PG9>VRC01	$1x10^{-8}$
CA	A3R5	BAL	PGT126>hu5A8	$5x10^{-9}$	CH040	hu5A8>PGT126	$4x10^{-13}$
					CH077	hu5A8>PGT126	$2x10^{-11}$
					WITO	hu5A8>PGT126	$2x10^{-15}$
CA	A3R5	BAL	PGT126>CH01	$6x10^{-10}$	WITO	CH01>PGT126	$4x10^{-6}$
		CH077	PGT126>CH01	$4x10^{-3}$			
CA	A3R5	BAL	PGT126>PG9	$9x10^{-12}$	CH077	PG9>PGT126	$4x10^{-4}$
					WITO	PG9>PGT126	$2x10^{-13}$
CA	A3R5	BAL	10E8>hu5A8	$3x10^{-3}$	WITO	hu5A8>10E8	$7x10^{-5}$
CF	A3R5	BAL	PGT126>10E8	$1x10^{-5}$	CH040	10E8>PGT126	$1x10^{-5}$
					CH077	10E8>PGT126	$4x10^{-13}$
					WITO	10E8>PGT126	$2x10^{-4}$
CF	A3R5	BAL	PGT126>CH01	$2x10^{-10}$	WITO	CH01>PGT126	$7x10^{-13}$
		CH077	PGT126>CH01	$8x10^{-19}$			
CF	A3R5	BAL	PGT126>hu5A8	$3x10^{-11}$	CH040	hu5A8>PGT126	$2x10^{-16}$
					CH077	hu5A8>PGT126	$1x10^{-3}$
					WITO	hu5A8>PGT126	$1x10^{-19}$
CF	A3R5	BAL	PGT126>PG9	$1x10^{-14}$	WITO	PG9>PGT126	$3x10^{-23}$
		CH040		$7x10^{-3}$			
CF	A3R5	BAL	VRC01>hu5A8	$3x10^{-14}$	CH040	hu5A8>VRC01	$4x10^{-13}$
					CH077	hu5A8>VRC01	$6x10^{-13}$
					WITO	hu5A8>VRC01	$9x10^{-14}$
CF	A3R5	BAL	VRC01>PG9	$3x10^{-13}$	CH077	PG9>VRC01	$7x10^{-9}$
		CH040	VRC01>PG9	$1x10^{-14}$	WITO	PG9>VRC01	$1x10^{-12}$
CF	A3R5	BAL	10E8>PG9	$6x10^{-7}$	CH077	PG9>10E8	$3x10^{-10}$
		CH040	10E8>PG9	$7x10^{-6}$	WITO	PG9>10E8	$1x10^{-11}$
CF	A3R5	BAL	4E10>CH01	$7x10^{-4}$	WITO	CH01>4E10	$7x10^{-13}$
CF	A3R5	BAL	4E10>PG9	$4x10^{-6}$	CH077	PG9>4E10	$5x10^{-18}$
					WITO	PG9>4E10	$2x10^{-19}$
CF	A3R5	CH040	VRC01>PGT126	$8x10^{-17}$	CH077	PGT126>VRC01	$4x10^{-12}$
		WITO	VRC01>PGT126	$5x10^{-16}$			

Table S4C: Differences in antibody neutralization efficiencies (neut.) with experimental conditions. Pairs of compared antibodies with significantly different neutralization efficiencies based on the cell-associated (CA) versus cell-free (CF) Env variant in the A3R5 assay. A stratified exact Wilcoxon rank sum test was performed for all possible comparisons of 2 of the 8 antibodies. Significant p values were determined after Holm's adjustment for all the antibody comparisons from the same experimental conditions. > indicates that the antibody to the left has a significantly greater neutralization efficiency than the antibody to the right.

D

Env variant	Quantity	Score				p value
		-2 (in minority of 3)	-1 (in minority of 2)	1 (in majority of 2)	2 (in majority of 3)	
BAL vs. other 3	Number	11	8	5	2	0.0089
	% of 26	42%	31%	19%	8%	
WITO vs. other 3	Number	0	6	8	13	0.00019
	% of 27	0%	22%	30%	48%	

Table S4D: Differences in antibody neutralization efficiencies (neut.) with experimental conditions. To explore if the chronic Env variant, BAL, responded differently to neutralizing antibodies than the three T/F HIV-1 Env variants, we examined 32 of the 37 total comparisons that included BAL where there were significant differences in the ordering of a pair of antibodies in Tables S4B and S4C. We calculated how often BAL had the minority or "odd man out" view (versus 2 or 3 of the other viruses, scores of -1 or -2, respectively) compared to the majority view (with 1 or 2 viruses, scores of 1 or 2, respectively), and which antibody had better neutralization efficiency. An exact Wilcoxon sign rank test was performed and determined that BAL was significantly associated with having a minority ordering (42 percent of scores were -2, 31 percent were -1, 19 percent were 1, and 8 percent were 2), and hence a significantly different neutralization response compared to the three T/F Env variants, WITO, CH040, and CH077 (p=0.009).